

AMENDMENTS TO THE SPECIFICATION:

Page 1, after line 5, please insert as follows:

BACKGROUND OF THE INVENTION

Page 1, after line 21, please insert as follows:

SUMMARY OF THE INVENTION

Page 4, after line 23, please insert as follows:

BRIEF DESCRIPTION OF THE DRAWINGS

Page 5, after line 16, please insert as follows:

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Please amend the paragraph beginning at page 5, lines 5-6, as follows:

~~Figure 9 is~~ Figures 9A-9D show a quantitative analysis of ultrasound data for
"brightness" coating (63f-h) compared to a poor coating (62f-h) on a stainless steel
plate;

Please amend the paragraph beginning at page 5, lines 7-8, as follows:

~~Figure 10 is~~ Figures 10A-10D show a quantitative analysis of ultrasound data for
"brightness" coating of a first trial stainless steel biopsy needle;

Please amend the paragraph beginning at page 5, lines 9-10, as follows:

~~Figure 11 is~~ Figures 11A-11D show a further quantitative analysis of ultrasound data for "brightness" coating on a stainless steel boxing needle;

Please amend the paragraph beginning at page 5, lines 15-16, as follows:

~~Figure 14 is~~ Figures 14A-14D show a quantitative analysis of ultrasound data for coating needles in a Tissue-Mimicking Phantom.

Page 5, after line 29, please insert as follows:

The above-mentioned needle is employed in conjunction with a conventional ultrasound imaging apparatus well known to those skilled in the art and therefore not described in detail herein. The essential components of such a device are however shown in Figure 1 and include an ultrasound transducer 52, signal processing means 54 for converting a received ultrasound signal into an electrical signal suitable for creating a display on a video monitor and a video monitor 56 for displaying said display.

Operation in the mode of the example is achieved by insertion of the needle 14 into, for example, human tissue 80 (Figure 8) and then into the human organ under investigation, a portion of which is shown at 82 in Figure 8. Once inserted, the effervescent material comes into contact with any fluid in said organ 82 and effervesces thereby to create a quantity of small gas bubbles as will be described below.

The ultrasound transducer 52 is placed on the outer surface 72 of, for example, the patient's body as shown in Figures 1 and 8 and acts to direct a quantity of ultrasonic energy in the general direction of the needle 14. The transducer 52 is then moved over

surface 72 in the direction of arrows A, B until a reflection is detected from the highly reflective gas bubbles 64.

This text is taken from WO 98/18387 (pages 6 and 7) and was apparently omitted from the present application in error by the original draftsman.

Please amend page 7, lines 1-30, as follows:

material and, secondly, they are mobile in the sense that they grow in size as they develop. Typically, a bubble generated in this manner will grow into a bubble having a diameter of at least and generally greater than 5 microns. For optimum performance it has been found that a bubble size of between 30 and 50 microns and preferably approximately 40 microns is best. The carrier material 30 also acts to protect the effervescent material ~~32~~32a, 32b which tends to be less robust and hence susceptible to damage during handling. In a preferred arrangement the carrier material comprises a hydrophilic material the advantages and function of which will be described later herein. Whilst it would be appreciated that any one of a number of materials could be employed to perform the function of the carrier material, it has been found that epoxy based resins are suitable for such applications. Such materials can be applied by a simple dipping technique followed by a curing step (which may simply comprise exposure to ambient air or may comprise a heating step) and are highly bio-compatible, should the instrument be required for use on a human or animal patient. A suitable material is polyurethane such as that sold under the trade name HydrothaneTM which can have a plurality of interconnecting pores or may be of a closed cellular structure and can be "engineered" to create a pore structure suitable for a particular application.

Clearly, such materials lend themselves to use in the present invention in which it is desirable to produce an cellular structure through which generated bubbles are able to pass. Polyolefins such as polyethylene or polypropylene may also be suitable examples. Alternatively, one might use polystyrene which, whilst normally would be hydrophobic, can be manufactured in hydrophilic form. The effervescent material chosen may comprise a number of different elements but the examples shown herein comprise sodium hydrogen carbonate and citric acid powder. Such a material is highly bio-compatible and therefore presents little if any hazard when the needle is employed for use on the human or animal body. Other materials may be employed, particularly when bio-compatibility is not an issue. It is worth mentioning that the ratio of the two reactive substances to each other and the ratio of the total reactive substance to the carrier material each have a significant effect on the performance of the present invention.